What is claimed is:

1. A configuration management method in a computer
system comprising a first storage device, a second storage
device which becomes a migration destination of a logical
volume of said first storage device, and a server which can
transmit an access request to said first and second storage
devices through a network, for setting up a configuration
in said second storage device, comprising:

a first step for obtaining a configuration including
a logical volume definition, which is set up in said first
storage device;

a second step for preparing a logical volume definition
of a logical volume of said second storage device which becomes
a migration destination of a logical volume of said first
storage device, on the basis of a logical volume definition
included in the configuration obtained in said first step;

a third step for preparing a cache allocation definition
of a logical volume of said second storage device which becomes
a migration destination of a logical volume of said first
storage device, in case that a cache allocation definition
is included in the configuration obtained in said first step,
on the basis of the cache allocation definition that said
first storage device has and capacity of a cache that said
second storage device has;

a fourth step for preparing a port bandwidth allocation

25 definition of a port that said second storage device has,

26 used for an access to a logical volume of said second storage

27 device which becomes a migration destination of a logical

28 volume of said first storage device, in case that a port

29 bandwidth allocation definition is included in the

30 configuration obtained in said first step, on the basis of

31 the port bandwidth allocation definition that said first

32 storage device has and bandwidth capacity of a port that

33 said second storage device has; and

34   a fifth step for setting up the logical volume

35 definition prepared in said second step, the cache allocation

36 definition in case that the cache allocation definition is

37 prepared in said third step, and the port bandwidth allocation

38 definition in case that the port bandwidth allocation

39 definition is prepared in said fourth step, in said second

40 storage device, as a configuration.

1   2. The configuration management method according to

2 Claim 1, wherein

3   said third step for preparing a cache allocation

4 definition of a logical volume of said second storage device,

5 so as for a cache allocation amount of a logical volume of

6 said second storage device which is a migration destination

7 of a logical volume of said first storage device to become

8 the same capacity as a cache allocation amount of a logical

9 volume of said first storage device, in case that a cache

10 allocation amount of a logical volume of said first storage

11 device, which is specified by a cache allocation definition

12 included in the configuration obtained in said first step

13 is smaller than remaining capacity to which a logical volume

14 is not allocated among total capacity of a cache that said

15 second storage device has.

1   3. The configuration management method according to

2 Claim 1, wherein

3   said fourth step for preparing a port bandwidth

4 allocation definition of a port that said second storage

5 device has, which is used for an access to a logical volume

6 of said second storage device which becomes a migration

7 destination of a logical volume of said first storage device,

8 so as for a port bandwidth allocation amount for an access

9 to a logical volume of said second storage device a migration

10 destination of a logical volume of said first storage device

11 to become the same capacity as a port bandwidth allocation

12 amount for an access to a logical volume of said first storage

13 device,

14   in case that a port bandwidth allocation amount for

15 an access to a logical volume of said first storage device,

16 which is specified by a port bandwidth allocation definition

17 included in the configuration obtained in said first step,

18 is smaller than bandwidth remaining capacity not allocated

19 to an access to a logical volume among total bandwidth capacity

20   of a port that said second storage device has.

1   4. The configuration management method according to
2   Claim 1, further comprising:
3   a sixth step for changing an access request object of
4   said server from a logical volume of said first storage device
5   to a logical volume of said second storage device which is
6   a migration destination of the logical volume.

1   5. A configuration management method in a computer
2   system comprising a first storage device, a second storage
3   device which becomes a migration destination of a logical
4   volume of said first storage device, and a server which can
5   transmit an access request to said first and second storage
6   devices through a network, for setting up a configuration
7   in said second storage device, comprising:
8   a first step for obtaining a configuration including
9   at least a logical volume definition, which is set up in
10   said first storage device;
11   a second step for preparing a logical volume definition
12   of a logical volume of said second storage device which becomes
13   a migration destination of a logical volume of said first
14   storage device, on the basis of a logical volume definition
15   included in the configuration obtained in said first step;
16   a third step for judging whether or not a cache
17   allocation amount of a logical volume of said first storage

18　device is smaller than remaining capacity to which a logical

19　volume is not allocated among total capacity of a cache that

20　said second storage device has, in case that a cache allocation

21　definition is included in the configuration obtained in said

22　first step, and prepares a cache allocation definition of

23　a logical volume of said second storage device which becomes

24　a migration destination of a logical volume of said first

25　storage device, in case that a cache allocation amount of

26　a logical volume of said first storage device is smaller

27　than remaining capacity to which a logical volume is not

28　allocated among total capacity of the cache that said second

29　storage device has, so as for a cache allocation amount of

30　a logical volume of said second storage device which is a

31　migration destination of a logical volume of said first

32　storage device to becomes the same capacity as a cache

33　allocation amount of a logical volume of said first storage

34　device;

35　　　　　a fourth step for judging whether or not a port bandwidth

36　allocation amount for an access to a logical volume of said

37　first storage device, which is specified by a port bandwidth

38　allocation definition, in case that the port bandwidth

39　allocation definition is included in the configuration which

40　was obtained in said first step, is smaller than bandwidth

41　remaining capacity which is not allocated to an access to

42　a logical volume among total capacity of a port that said

43　second storage device has, and prepares a port bandwidth

44 allocation definition of a port that said second storage

45 device has, which is used for an access to a logical volume

46 of said second storage device which becomes a migration

47 destination of a logical volume of said first storage device,

48 in case that a port bandwidth allocation definition for an

49 access to a logical volume of said first storage device is

50 smaller than bandwidth remaining capacity which is not

51 allocated to an access to a logical volume among total capacity

52 of a port that said second storage device has, so as for

53 a port bandwidth allocation amount for an access to a logical

54 volume of said second storage device which is a migration

55 destination of a logical volume of said first storage device

56 to become the same capacity as a port bandwidth allocation

57 amount for an access to a logical volume of said first storage

58 device;

59   a fifth step for setting up the logical volume

60 definition which was prepared in said second step, the cache

61 allocation definition in case that the cache allocation

62 definition was prepared in said third step, and the port

63 bandwidth allocation definition in case that the port

64 bandwidth allocation definition was prepared in said fourth

65 step, in said second storage device, as a configuration;

66   a sixth step for changing an access request object of

67 said server from a logical volume of said first storage device

68 to a logical volume of said second storage device which is

69 a migration destination of the logical volume; and

70   a seventh step for changing an access control list of

71 said first storage device, so as to reject an access request

72 from said server.

1   6. A configuration management apparatus in a computer

2   system comprising a first storage device, a second storage

3   device which becomes a migration destination of a logical

4   volume of said first storage device, and a server which can

5   transmit an access request to said first and second storage

6   devices through a network, for setting up a configuration

7   in said second storage device, comprising:

8   a calculation device, and a storage subsystem, wherein

9   said calculation device carries out

10   a process which obtains a configuration including a

11 logical volume definition and a cache allocation definition

12 and/or a port bandwidth allocation definition, from said

13 first storage device and stores them in said storage

14 subsystem,

15   a process which prepares a logical volume definition

16 of a logical volume of said second storage device which becomes

17 a migration destination of a logical volume of said first

18 storage device, on the basis of a logical volume definition

19 included in the configuration stored in said storage

20 subsystem,

21   a process which prepares a cache allocation definition

22 of a logical volume of said second storage device which becomes

23 a migration destination of a logical volume of said first

24 storage device, in case that a cache allocation definition

25 is included in the configuration stored in said storage

26 subsystem, on the basis of the cache allocation definition

27 that said first storage device has and capacity of a cache

28 that said second storage device has,

29 a process which prepares a port bandwidth allocation

30 definition of a port that said second storage device has,

31 which is used for an access to a logical volume of said second

32 storage device which becomes a migration destination of a

33 logical volume of said first storage device, in case that

34 a port bandwidth allocation definition is included in the

35 configuration stored in said storage subsystem, on the basis

36 of the port bandwidth allocation definition that said first

37 storage device has and bandwidth capacity of a port that

38 said second storage device has, and

39 a process which sets up the prepared logical volume

40 definition, the cache allocation definition in case that

41 the cache allocation definition is prepared, and the port

42 bandwidth allocation definition in case that the port

43 bandwidth allocation definition is prepared, as a

44 configuration of said second storage device.

1 7. The configuration management apparatus according

2 to Claim 6, wherein

3 said configuration management apparatus is built up

4   on said second storage device.

1   8. The configuration management apparatus according
2   to Claim 6 is connected to each device which configures said
3   computer system through another network separated from said
4   network.

1   9. A computer system comprising:
2   a first storage device;
3   a second storage device which becomes a migration
4   destination of a logical volume of said first storage device;
5   a server which can transmit an access request to said
6   first and second storage devices through a network; and
7   a configuration management apparatus which sets up a
8   configuration in said second storage device, wherein
9   said configuration management apparatus has a
10   calculation device, and a storage subsystem, wherein
11   said calculation device carries out
12   a process which obtains a configuration including a
13   logical volume definition, from said first storage device
14   and stores it in said storage subsystem,
15   a process which prepares a logical volume definition
16   of a logical volume of said second storage device which becomes
17   a migration destination of a logical volume of said first
18   storage device, on the basis of a logical volume definition
19   included in the configuration stored in said storage

20   subsystem,

21   a process which prepares a cache allocation definition

22   of a logical volume of said second storage device which becomes

23   a migration destination of a logical volume of said first

24   storage device, in case that a cache allocation definition

25   is included in the configuration which was stored in said

26   storage subsystem, on the basis of the cache allocation

27   definition that said first storage device has and capacity

28   of a cache that said second storage device has,

29   a process which prepares a port bandwidth allocation

30   definition of a port that said second storage device has,

31   which is used for an access to a logical volume of said second

32   storage device which becomes a migration destination of a

33   logical volume of said first storage device, in case that

34   a port bandwidth allocation definition is included in the

35   configuration stored in said storage subsystem, on the basis

36   of the port bandwidth allocation definition that said first

37   storage device has and bandwidth capacity of a port that

38   said second storage device has, and

39   a process which sets up the prepared logical volume

40   definition, the cache allocation definition in case that

41   the cache allocation definition is prepared, and the port

42   bandwidth allocation definition in case that the port

43   bandwidth allocation definition is prepared, as a

44   configuration of said second storage device.

1   10. A computer-readable recording medium in a computer

2   system comprising a first storage device, a second storage

3   device which becomes a migration destination of a logical

4   volume of said first storage device, and a server which can

5   transmit an access request to said first and second storage

6   devices through a network, stores a program used to set up

7   a configuration of said second storage device, storing a

8   program which has a computer executed:

9   a first step for obtaining a configuration including

10   a logical volume definition, which is set up in said first

11   storage device,

12   a second step for preparing a logical volume definition

13   of a logical volume of said second storage device which becomes

14   a migration destination of a logical volume of said first

15   storage device, on the basis of a logical volume definition

16   which is included in the configuration which was obtained

17   in said first step,

18   a third step for preparing a cache allocation definition

19   of a logical volume of said second storage device which becomes

20   a migration destination of a logical volume of said first

21   storage device, in case that a cache allocation definition

22   is included in the configuration obtained in said first step,

23   on the basis of the cache allocation definition that said

24   first storage device has and capacity of a cache that said

25   second storage device has,

26   a fourth step for preparing a port bandwidth allocation

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27 definition of a port that said second storage device has,

28 which is used for an access to a logical volume of said second

29 storage device which becomes a migration destination of a

30 logical volume of said first storage device, in case that

31 a port bandwidth allocation definition is included in the

32 configuration which was obtained in said first step, on the

33. basis of the port bandwidth allocation definition that said

34 first storage device has and bandwidth capacity of a port

35 that said second storage has, and

36   a fifth step for setting up the logical volume

37 definition which was prepared in said second step, the cache

38 allocation definition in case that the cache allocation

39 definition is prepared in said third step, and the port

40 bandwidth allocation definition in case that the port

41 bandwidth allocation definition is prepared in said fourth

42 step, in said second storage device.

1   11. A configuration management method in a computer

2 system comprising a first storage device, a virtualization

3 device which manages a logical volume of said first storage

4 device by a virtual volume which is a virtual logical volume,

5 and a server which can transmit an access request to said

6 first storage device and said virtualization device through

7 a network, for setting up a configuration in said

8 virtualization device, comprising:

9   a first step for obtaining a configuration including

10   a logical volume definition, which is set up in said first

11   storage device;

12   a second step for preparing a logical volume definition

13   of a virtual volume of said virtualization device which

14   virtualizes a logical volume of said first storage device,

15   on the basis of a logical volume definition which is included

16   in the configuration obtained in said first step;

17   a third step for preparing a cache allocation definition

18   of a virtual volume of said virtualization device which

19   virtualizes a logical volume of said first storage device,

20   in case that a cache allocation definition is included in

21   the configuration obtained in said first step, on the basis

22   of the cache allocation definition that said first storage

23   device has and capacity of a cache that said virtualization

24   device has;

25   a fourth step for preparing a port bandwidth allocation

26   definition of a port that said virtualization device has,

27   which is used for an access to a virtual volume of said

28   virtualization device which virtualizes a logical volume

29   of said first storage device, in case that a port bandwidth

30   allocation definition is included in the configuration which

31   was obtained in said first step, on the basis of the port

32   bandwidth allocation definition that said first storage

33   device has and bandwidth capacity of a port that said

34   virtualization device has; and

35   a fifth step for setting up the logical volume

36   definition prepared in said second step, the cache allocation

37   definition in case that the cache allocation definition is

38   prepared in said third step, and the port bandwidth allocation

39   definition in case that the port bandwidth allocation

40   definition is prepared in said fourth step, in said

41   virtualization device, as a configuration.

1   12. The configuration management method according to

2   Claim 11, wherein

3   said third step for preparing a cache allocation

4   definition of a virtual volume of said virtualization device,

5   so as for a cache allocation amount of a virtual volume of

6   said virtualization device which virtualizes a logical

7   volume of said first storage device to become the same capacity

8   as a cache allocation amount of a logical volume of said

9   first storage device, in case that a cache allocation amount

10   of a logical volume of said first storage device, which is

11   specified by a cache allocation definition included in the

12   configuration obtained in said first step is smaller than

13   remaining capacity to which a logical volume is not allocated

14   among total capacity of a cache that said virtualization

15   device has.

1   13. The configuration management method according to

2   Claim 11, wherein

3   said port bandwidth allocation definition of a port

4 that said virtualization device has, which is used for an

5 access to a virtual volume of said virtualization device

6 which virtualizes a logical volume of said first storage

7 device, so as for a port bandwidth allocation amount for

8 an access to a logical volume of said virtualization device

9 which virtualizes a logical volume of said first storage

10 device to becomes the same capacity as a port bandwidth

11 allocation amount for an access to a logical volume of said

12 first storage device,

13 in case that a port bandwidth allocation amount for an access

14 to a logical volume of said first storage device, which is

15 specified by a port bandwidth allocation definition included

16 in the configuration obtained in said first step, is smaller

17 than bandwidth remaining capacity which is not allocated

18 to an access to a logical volume among total bandwidth capacity

19 of a port that said virtualization device has.

1   14. The configuration management method according to

2 Claim 11, further comprising:

3   a sixth step for changing an access request object of

4 said server from a logical volume of said first storage device

5 to a virtual volume of said virtualization device which

6 virtualizes the logical volume.

1   15. The configuration management method according to

2 Claim 14, further comprising:

3   a seventh step for changing an access control list of

4 said first storage device, so as to reject an access request

5 from said server.

1   16. A configuration management apparatus in a computer

2 system comprising a first storage device, a virtualization

3 device which manages a logical volume of said first storage

4 device by a virtual volume which is a virtual logical volume,

5 and a server which can transmit an access request to said

6 first storage device and said virtualization device through

7 a network, for setting sets up a configuration in said

8 virtualization device, comprising:

9   a calculation device, and a storage subsystem, wherein

10   said calculation device carries out

11   a process which obtains a configuration including a

12 logical volume definition, from said first storage device

13 and stores it in said storage subsystem,

14   a process which prepares a logical volume definition

15 of a virtual volume of said virtualization device which

16 virtualizes a logical volume of said first storage device,

17 on the basis of a logical volume definition included in the

18 configuration stored in said storage subsystem,

19   a process which prepares a cache allocation definition

20 of a virtual volume of said virtualization device which

21 virtualizes a logical volume of said first storage device,

22 in case that a cache allocation definition is included in

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23   the configuration which was stored in said storage subsystem,

24   on the basis of the cache allocation definition that said

25   first storage device has and capacity of a cache that said

26   virtualization device has,

27   a process which prepares a port bandwidth allocation

28   definition of a port that said virtualization device has,

29   which is used for an access to a virtual volume of said

30   virtualization device which virtualizes a logical volume

31   of said first storage device, in case that a port bandwidth

32   allocation definition is included in the configuration

33   stored in said storage subsystem, on the basis of the port

34   bandwidth allocation definition that said first storage

35   device has and bandwidth capacity of a port that said

36   virtualization device has, and

37   a process which sets up the prepared logical volume

38   definition, the cache allocation definition in case that

39   the cache allocation definition is prepared, and the port

40   bandwidth allocation definition in case that the port

41   bandwidth allocation definition is prepared, as a

42   configuration of said virtualization device.

1   17. The configuration management apparatus according

2   to Claim 16, wherein

3   said configuration management apparatus is built up

4   on said virtualization device.

1   18. The configuration management apparatus according
2   to Claim 16 is connected to each device which configures
3   said computer system through another network separated from
4   said network.

1   19. A computer system comprising:
2   a first storage device;
3   a virtualization device which unifies the management
4   of a logical volume of said first storage device by a virtual
5   volume which is a virtual logical volume;
6   a server which can transmit an access request to said
7   first storage device and said virtualization device through
8   a network; and
9   a configuration management apparatus which sets up a
10   configuration in said virtualization device, wherein
11   said configuration management apparatus has
12   a calculation device, and a storage subsystem, wherein
13   said calculation device carries out
14   a process which obtains a configuration including a
15   logical volume definition, from said first storage device
16   and stores it in said storage subsystem,
17   a process which prepares a logical volume definition
18   of a virtual volume of said virtualization device which
19   virtualizes a logical volume of said first storage device,
20   on the basis of a logical volume definition which is included
21   in the configuration which was stored in said storage

22 subsystem,

23   a process which prepares a cache allocation definition

24 of a virtual volume of said virtualization device which

25 virtualizes a logical volume of said first storage device,

26 in case that a cache allocation definition is included in

27 the configuration stored in said storage subsystem, on the

28 basis of the cache allocation definition that said first

29 storage device has and capacity of a cache that said

30 virtualization device has,

31   a process which prepares a port bandwidth allocation

32 definition of a port that said virtualization device has,

33 which is used for an access to a virtual volume of said

34 virtualization device which virtualizes a logical volume

35 of said first storage device, in case that a port bandwidth

36 allocation definition is included in the configuration which

37 was stored in said storage subsystem, on the basis of the

38 port bandwidth allocation definition that said first storage

39 device has and bandwidth capacity of a port that said

40 virtualization device has, and

41   a process which sets up the prepared logical volume

42 definition, the cache allocation definition in case that

43 the cache allocation definition is prepared, and the port

44 bandwidth allocation definition in case that the port

45 bandwidth allocation definition is prepared, as a

46 configuration of said virtualization device.

1   20. A computer-readable recording medium in a computer

2   system comprising a first storage device, a virtualization

3   device which manages a logical volume of said first storage

4   device by a virtual volume which is a virtual logical volume,

5   and a server which can transmit an access request to said

6   first storage device and said virtualization device through

7   a network, stores a program which is used to set up a

8   configuration in said virtualization device, storing a

9   program which has a computer executed:

10   a first step for obtaining a configuration including

11   a logical volume definition, which is set up in said first

12   storage device,

13   a second step for preparing a logical volume definition

14   of a virtual volume of said virtualization device which

15   virtualizes a logical volume of said first storage device,

16   on the basis of a logical volume definition which is included

17   in the configuration obtained in said first step,

18   a third step for preparing a cache allocation definition

19   of a virtual volume of said virtualization device which

20   virtualizes a logical volume of said first storage device,

21   in case that a cache allocation definition is included in

22   the configuration obtained in said first step, on the basis

23   of the cache allocation definition that said first storage

24   device has and capacity of a cache that said virtualization

25   device has,

26   a fourth step for preparing a port bandwidth allocation

27 definition of a port that said virtualization device has,
28 which is used for an access to a virtual volume of said
29 virtualization device which virtualizes a logical volume
30 of said first storage device, in case that a port bandwidth
31 allocation definition is included in the configuration which
32 was obtained in said first step, on the basis of the port
33 bandwidth allocation definition that said first storage
34 device has and bandwidth capacity of a port that said
35 virtualization device has, and

36   a fifth step for setting up the logical volume
37 definition which was prepared in said second step, the cache
38 allocation definition in case that the cache allocation
39 definition is prepared in said third step, and the port
40 bandwidth allocation definition in case that the port
41 bandwidth allocation definition is prepared in said fourth
42 step, in said virtualization device, as a configuration.